



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/606,153                      Art Unit: 2677  
Filing Date: 06/25/2003                      Examiner: Pervan, Michael  
Confirmation No.: 3553  
Applicant: Angelo Tortola  
For: System and method for remote display  
  
Docket No.: TKC                                      Customer No.: 32835

26 January 2008

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**  
**TO THE BOARD OF PATENT APPEALS AND INTERFERENCES OF THE**  
**UNITED STATES PATENT AND TRADEMARK OFFICE**

Sir:

This Appeal Brief is being submitted subsequent to the Notice of Appeal filed by the Appellant 24 September 2007 and having a date of receipt of 26 September 2007.

A petition for a two-month extension of time is included to bring the two-month time for filing the Appeal Brief from 26 November 2007 to 28 January 2008.

**1) *Real Party in Interest***

The real party in interest is the above-identified inventor Angelo Tortola.

**2) *Related Appeals and Interferences***

There are no related appeals or interferences.

**3) *Status of the Claims***

On 24 September 2007, the Appellant appealed from the final rejections of claims 1-12 and 14-20 made in the Final Office Action dated 23 May 2007. The claims on appeal are set forth in Appendix I.

**4) *Status of the Amendments***

After the Final Office Action, the Appellant did not amend the claims.

**5) *Summary of the Invention***

In a first exemplary embodiment of the claimed invention, a remote display system 10 (Figure 1) comprises a base station 20 for transmitting a data output signal 31 for display at one or more remote display devices 40. The base station 20 includes a computer 21 for generating the data output signal 31, the data output signal 31 being converted into an RF control and data interface signal 33 by a controller processor 23 which receives the data output signal 31 from the computer 21. In an alternative exemplary embodiment, the data output signal 31 may be supplied to the computer 21 via an Internet connection. An RF transmitter 27 broadcasts the control and data interface signal 33 as an RF signal 35 to the remote display devices 40 at a high RF frequency (e.g., 400 to 900 MHz) within non-regulated power levels. Each display device 40 includes an RF receiver 47 for receiving the RF signal 35 and outputting a control and data interface signal 37 corresponding to the original control and data interface signal 33. The control and data interface signal 37 is converted via a display controller 43 into a data output signal 39 corresponding to the original data output signal 31. The data output signal 39 is then provided to the display device 40, such as a monitor, an LCD screen, or a scrolling display, for viewing by a remote user.

In another exemplary embodiment, a remote display system 50 (Figure 2) comprises a base station 60 for transmitting a data output signal 71 for display at one or more remote display devices 80. The base station 50 includes the computer 21 for generating the data output signal 71, the data output signal 71 being converted into an RF control and data interface signal 73 by a first controller 61 which receives the data output signal 73 from the computer 21. A first receiver/transmitter 63 broadcasts the control and data interface signal 73 as an RF signal 75 to the remote display devices 80 at the high RF frequency (e.g., 400 to 900 MHz) within non-regulated power levels. Each display device 80 includes a second receiver/transmitter 81 for receiving the RF signal 75 and outputting a control and data interface signal 77 corresponding to the original control and data interface signal 73. The control and data interface signal 77 is converted via a second controller 83 into a data output signal 79 corresponding to the original data output signal 71. The data output signal 79 is then provided to the display device 80 for viewing by the remote user. In another alternative exemplary embodiment, the display device 80 may include a touch screen 51, a proximity sensor 53, or a keypad switch 55 to transmit to the base station 60 feedback signals originating from the user at the display device 80.

**6) Issues**

**Issue 1.** Whether claims 1-4, 6-8, 14-15, and 20 are patentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,084,584 issued to *Nahi et al.* in view of U.S. Patent No. 5,818,425 issued to *Want et al.*

**Issue 2.** Whether claim 5 is patentable under 35 U.S.C. §103(a) over *Nahi et al.* '584 in view of *Want et al.* '425 and further in view of U.S. Patent No. 5,305,197 issued to *Axler et al.*

**Issue 3.** Whether claims 9-12 and 16-19 are patentable under 35 U.S.C. §103(a) over *Nahi et al.* '584 in view of U.S. Patent No. 6,130,603 issued to *Briechele et al.* and further in view of *Axler et al.* '197.

**7) Grouping of the Claims**

The claims do not stand or fall together. For the purpose of expediting this Appeal, and for the purpose of meeting the requirements of 37 CFR §1.192, the Appellant suggests the following groupings of claims, which are argued separately, below. The Appellant does not make any admission that claims grouped within this Appeal may not be argued in another forum as independently patentable from other claims grouped for convenience within this Brief on Appeal.

Group I: Claims 1-4, 6-8, 14-15, and 20.

Group II: Claim 5.

Group III: Claims 9-12 and 16-19.

8) *Argument*

*Applicable Law*

The Examiner has the burden under 35 U.S.C. §103 to establish a prima facie case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). To establish obviousness, the Examiner must show that some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art would lead an individual to combine the relevant teaching of the references. *Id.*

The Fine court stated that:

Obviousness is tested by “what the combined teaching of the references would have suggested to those of ordinary skill in the art” *In re Keller*, 642, F.2d 413, 425, 208 USPQ 871, 878 (CCPA 1981). But it “cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination.” *ACS Hosp. Sys.*, 732 F.2d at 1577, 221 USPQ at 933. And “teachings of references can be combined only if there is some suggestion or incentive to do so.” *Id.*

The M.P.E.P. adopts this line of reasoning by stating that:

“In order for the Examiner to establish a prima facie case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on [Appellant's] disclosure.” M.P.E.P. §2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir. 1991).

***Issue 1: Whether claims 1-4, 6-8, 14-15, and 20 are patentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,084,584 issued to Nahi et al. in view of U.S. Patent No. 5,818,425 issued to Want et al.***

The Appellant claims, in claim 1, a remote display system suitable for transmitting a data output signal for providing a display at a remote location, said remote display system comprising: a base station, said base station including a computer for providing the data output signal, a control processor for converting the data output signal into a control and data interface radio frequency (RF) signal, an RF transmitter for broadcasting said control and data interface RF signal; and at least one display device, each said display device including an RF receiver for receiving said control and data interface RF signal, a display controller for converting said control and data interface RF signal into the data output signal, a display unit for providing a display corresponding to the data output signal; and a power supply for providing power only to said RF receiver, to said display controller, and to said display unit.

In section 1 of the Final Office Action, the Examiner alleges that, in regard to claim 1, *Nahi et al. '584* discloses “a remote display system comprising: a base station...and at least one display device; each display device including an RF receiver (transceiver 88) for receiving said control and data interface RF signal...” The Appellant submits that, as is well known in the relevant art, a transceiver comprises both a transmitter and a receiver. The system taught by *Nahi et al. '584* therefore comprises a display device including both a transmitter and a receiver, and does not disclose a display device having a power supply providing power only to a receiver, a display controller, and to the display unit, as claimed by the Appellant.

The limitation of a display device including a powered receiver and not claiming a transmitter is unobvious over the computer system taught by *Nahi et al. '584*. Specifically, the cited reference discloses “a portable, interactive display tablet that permits immediate area interactive access to and the use of a computer system...” (col. 1, lines 24-25). “The portable display tablets 20a-c are...user input devices that allow a computer user to, in effect, operate the host computer system 14 in almost all respects without requiring a physical connection to the host computer 14...” (col. 7, lines 19-24 and Figure 1). The internal electronic control system 60 for a display tablet 20 is shown in Figure 3 of *Nahi et al. '584*. The control system 60 utilizes a “main processor bus 62 to provide a data and control interconnect between a microcontroller CPU 64 and a main memory bank

66” (col. 9, lines 52-53) where “independent power regulation may be provided for an audio subsystem 80, PCMCIA interface 86, and a short range transceiver 88” (col. 10, lines 34-36). The system taught by *Nahi et al. '584* requires the transceiver 88 in the display tablet 20, and thus cannot function with a receiver only, because the user of display tablet 20 needs to maintain two-way communicate with the transceiver 18 at the host computer system 14.

As discussed above, the Appellant claims, in claim 1, “a power supply for providing power only to said RF receiver, to said display controller, and to said display unit.” In the Office Action, the Examiner had stated that *Nahi et al. '584* does not disclose a power supply for providing power only to the RF receiver, to the display controller, and to the display unit. The Examiner instead relies on the combination of *Nahi et al. '584* with *Want et al. '425* to support the obviousness rejection of claim 1. The Appellant submits that the combination of *Nahi et al. '584* with *Want et al. '425*, taken as a whole, do not suggest claimed subject matter.

Disclosed in *Want et al. '425* is a “user interface system 10 for graphically displaying pen-based input on a large display screen 50. The system 10 supports a variety of portable input devices, including a notebook computer 20, a personal digital assistant 30, a small tablet computer 40, or any other electronic device capable of communicating with a computer 51 via a wireless transceiver link 56 to generate a display on the large display screen” (col. 3, lines 17-25 and Figure 1). Communication with the portable notebook computer 20 is provided by a transceiver 26 that receives and transmits wireless signals 27 (col. 3, lines 31-32). Communication with the personal digital assistant 30 is provided by a transceiver 36 that receives and transmits wireless signals 37 (col. 3, lines 41-44). Communication with the small tablet computer 40 is provided by a transceiver 46 that receives and transmits wireless signals 47 (col. 3, lines 53-54). These “portable computers are in wireless communication with the computer 51 using the wireless transceiver link 56” (col. 3, lines 63-65).

Accordingly, as wireless communication in the system taught by *Nahi et al. '584* functions by communicating between and among transceivers, and as wireless communication in the system taught by *Want et al. '425* functions by communicating between and among transceivers, wireless communication in a system formed in accordance with any combination of *Nahi et al. '584* and *Want et al. '425* will function by communicating between and among transceivers. Any such combination will not, therefore, suggest “a power supply for providing power only to said RF receiver, to said

display controller, and to said display unit” as claimed by the Appellant. The Appellant respectfully submits that the rejection of independent claim 1 and dependent claims 2-3 and 6-8 as unpatentable under *Nahi et al.* '584 in view of *Want et al.* '425 is erroneous

As regards claim 14, the Examiner has stated that claim 14 claims method steps parallel to the structural means cited in claim 1 and is therefore rejected for the same reasons. The Appellant respectfully submits that the rejection of independent claim 14 and dependent claims 15 and 20 as unpatentable under *Nahi et al.* '584 in view of *Want et al.* '425 is erroneous for the same reasons as given above for claim 1.



***Issue 2: Whether claim 5 is patentable under 35 U.S.C. §103(a) over Nahi et al. '584 in view of Want et al. '425 and further in view of U.S. Patent No. 5,305,197 issued to Axler et al.***

The Appellant fails to appreciate the reasons for the Examiner's rejection of claim 5 under 35 U.S.C. §103(a). Claim 5 claims "[t]he remote display system of claim 2 wherein said display information comprises at least one of an advertisement, a banner, and product data." In the Final Office Action, at section 2, the Examiner states that *Axler et al. '197* discloses display information comprising at least one of an advertisement, a banner, and product data (referring to col. 4, lines 22-24 and lines 46-53). The Examiner further alleges that it would have been obvious to modify *Nahi et al. '584* with the teachings of *Axler et al. '197* "because it would allow a user to purchase a product or find the new product or price of the product in the hand-held device."

*Axler et al. '197* discloses a coupon dispensing machine 20 having a "scroll sign 26 [which] sends messages to the consumer. Scroll sign 26 is preferably multicolor and can scroll and flash" (col. 4, lines 22-24 and Figure 1). A motion detector (not shown) may send a signal to a central processor that a consumer is in the vicinity of the coupon dispensing machine 20. "That, in turn actuates signals to activate the scroll sign [26] to provide instructions to the consumer...Based on the signals sent from the motion detector, the coupon machine changes state from 'Attract' mode to 'Greet' mode and changes the message on the LED scrolling sign [26] and the VF display as well as the music and voice output and the behavior of the flashing LED buttons" (col. 6, lines 52-62).

The Appellant submits that references, taken as a whole, do not suggest claimed subject matter. *Axler et al. '197* teaches that the scroll sign 26 changes display in response to action at the scroll sign 26. This action is communicated to the central processor, and signals are actuated thereby to activate the scroll sign to change state. That is, the scroll sign 26 requires a two-way communication capability between the scroll sign 26 and the central processor. The system taught by *Nahi et al. '584* comprises a display device including a transceiver, for purpose of two-way communication, as explained above in Issue 1. Accordingly, any combination of *Axler et al. '197* and *Nahi et al. '584* would require two-way communication between a display device and a host computer or processor. In comparison, the Appellant claims in claim 5 "an RF receiver for receiving said control and data interface RF signal" for the purpose of receiving only. Accordingly, the Appellant respectfully submits that the rejection of claim 5 as unpatentable under 35 U.S.C. §103(a) over *Nahi et al. '584* in view of *Want et al. '425* and further in view of *Axler et al. '197* is erroneous.

***Issue 3: Whether claims 9-12 and 16-19 are patentable under 35 U.S.C. §103(a) over Nahi et al. '584 in view of U.S. Patent No. 6,130,603 issued to Briechle et al. and further in view of Axler et al. '197.***

In the Final Office Action, at section 3, the Examiner alleges that “[i]n regards to claim 9, it includes all of the limitations of claim 1, but also further limits by adding a duplex signal and a single RF software module that includes a controller and RF receiver/transmitter similar to that of claim 1...” The Examiner further states that *Nahi et al. '584* “discloses the use of a duplex signal [but] does not disclose a RF transceiver and controller as one subsystem.” The Examiner concludes that as *Briechle et al. '603* “discloses a RF transceiver and controller as one subsystem (col. 3, lines 54-64) [i]t would have been obvious at the time of invention to modify Nahi with the teachings of Briechle since power would be conserved.”

The Appellant claims in claim 9 a “remote display system...comprising...a first unitary RFOS operating software module including a first controller for converting said duplex data signal into a control and data interface signal, [and] a first RF receiver/transmitter for broadcasting said control and data interface signal as an RF signal...” Technical specifications for the RFOS operating software module are provided in Appendix II. The Examiner has rejected claim 9 arguing that a RF transceiver and controller disclosed as one subsystem by *Briechle et al. '603* renders as obvious the unitary RFOS operating software module claimed by the Appellant.

In Figure 3, *Briechle et al. '603* discloses a “functional block diagram [forming] a prior art configuration for a label [where Figure 3 shows a] controller 26 (typically a microcontroller containing a microprocessor) [having] discrete lines 29 and 30 which address the segments of the LCD 24. A crystal 28 provides a time reference for the controller 26. A battery 27, typically a lithium cell, powers all the components of the label 23. The controller 26 communicates with the rest of the system via antenna 22, and conventional analog circuitry, not shown in FIG. 3, modulates and demodulates the RF signals to and from the antenna 22” (col. 3, lines 54-64). The Appellant submits that the cited reference is non-enabling with respect to the controller 26 since the box representing the controller 26 is part of a functional block diagram and not a component block diagram. Moreover, Figure 3 does not disclose the internal electronic configuration of the components comprising the controller 26. Consequently, one skilled in the art could not determine

whether the controller 26 included a unitary component such as the RFOS operating software module claimed by the Appellant.

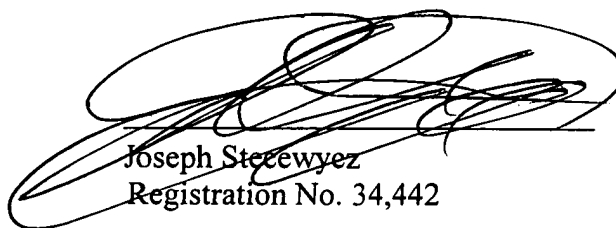
The limitations of claim 9 render the claimed subject matter unobvious over the combination of *Nahi et al.* '584, *Brieche et al.* '603, and *Axler et al.* '197. As can be appreciated by one skilled in the relevant art, providing a unitary RFOS operating software module allows for placement of a display device in unique locations. One exemplary commercial application of a display device fabricated in accordance with the limitations of claim 9 is illustrated in a photograph and exploded isometric diagram provided in Appendix III. The display device is shown emplaced on the handle of a shopping cart in the photograph. The unitary RFOS operating software module emplaced in the display device of the photograph is shown in the exploded isometric diagram and identified by the callout "Assembly."

As regards claims 10-12, the Appellant respectfully submits that the rejection of claims 10-12 as unpatentable under *Nahi et al.* '584 in view of *Brieche et al.* '603 and further in view of *Axler et al.* '197 is erroneous for the same reasons as given above for claim 9.

As regards claims 16-19, the Examiner has stated that claims 16-19 claim method steps paralleled to the structural means cited in claims 11 and 12 and are therefore rejected for the same reasons. The Appellant respectfully submits that the rejection of claims 16-19 as unpatentable under *Nahi et al.* '584 in view of *Brieche et al.* '603 and further in view of *Axler et al.* '197 is erroneous for the same reasons as given above for claims 11 and 12.

The Appellant respectfully requests reversal of the above rejections. If the Board is of the opinion that any rejected claim may be allowable in amended form, then the Appellant also respectfully requests a statement to that effect.

Respectfully submitted,



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Application No.: **10/606,153**  
Appeal Brief dated: 26 January 2008

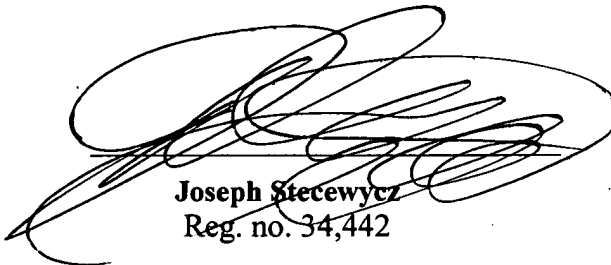
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## **APPENDIX I PENDING CLAIMS**

1. A remote display system suitable for transmitting a data output signal for providing a display at a remote location, said remote display system comprising:

a base station, said base station including

a computer for providing the data output signal,

a control processor for converting the data output signal into a control and data interface radio frequency (RF) signal,

an RF transmitter for broadcasting said control and data interface RF signal;

and

at least one display device, each said display device including

an RF receiver for receiving said control and data interface RF signal,

a display controller for converting said control and data interface RF signal into the data output signal,

a display unit for providing a display corresponding to the data output signal;

and

a power supply for providing power only to said RF receiver, to said display controller, and to said display unit.

2. The remote display system of claim 1 wherein said control and data interface RF signal comprises display information for said display unit.

3. The remote display system of claim 2 wherein said display information is generated in said computer.

4. The remote display system of claim 2 wherein said display information is obtained from at least one of a remote server and a remote operator via the internet.
5. The remote display system of claim 2 wherein said display information comprises at least one of an advertisement, a banner, and product data.
6. The remote display system of claim 1 wherein said RF transmitter and said RF receiver each operate at a frequency comprising a member of the group consisting of a 400 MHz band and a 900 MHz band.
7. The remote display system of claim 1 wherein said RF receiver is powered by at least one of a battery and a solar cell.
8. The remote display system of claim 1 wherein said display unit comprises at least one of an electrophoretic display and a cholesteric liquid crystal display.

9. A remote display system suitable for transmitting data output signals between a central location and a display at a remote location, said remote display system comprising:

a base station including

a computer for providing a duplex data signal,

a first unitary RFOS operating software module including

a first controller for converting said duplex data signal into a control and data interface signal,

a first RF receiver/transmitter for broadcasting said control and data interface signal as an RF signal; and

at least one display device, each said display device including

a second unitary RFOS operating software module including

a second RF receiver/transmitter for converting said RF signal into a received control and data interface signal,

a second controller for converting said received control and data interface signal into the data output signal,

a display unit in communication with said second unitary RFOS operating software module for providing a display corresponding to the data output signal.

10. The remote display system of claim 9 wherein said display device further comprises a proximity sensor for providing a signal to indicate the presence of a customer.

11. The remote display system of claim 10 wherein said second controller is configured to read signals provided by said proximity sensor.

12. The remote display system of claim 9 wherein said display device further comprises at least one of a keypad switch and a touch-screen for providing feedback from a user viewing an image on said display unit.
13. (Cancelled)
14. A method for producing a display at a remote location, said method comprising the steps of:
- providing a data output signal to a first unitary RFOS operating software module operating in full duplex mode, said first unitary RFOS operating software module including a first controller and a first RF receiver/transmitter, said data output signal including display information suitable for display at one or more display devices;
- generating an RF control and data interface signal in said first unitary RFOS operating software module from said data output signal, said RF control and data interface signal subsequently broadcast as an RF signal via said first unitary RFOS operating software module;
- receiving said RF signal at a second unitary RFOS operating software module, said second unitary RFOS operating software module including a second RF receiver/transmitter and a second controller, and
- transmitting a control and data interface signal from said second RF receiver/transmitter to said second controller; and
- sending a display data output signal from said second controller to a display unit at the remote location.
15. The method of claim 14 wherein said RF signal operates at a frequency comprising a member of the group consisting of a 400 MHz band and a 900 MHz band.



16. The method of claim 14 further comprising the steps of generating user feedback at the remote location and transmitting said feedback to said second RF receiver/transmitter via a duplex signal.
17. The method of claim 16 wherein said user feedback comprises feedback data obtained via a proximity sensor.
18. The method of claim 16 wherein said user feedback comprises feedback data obtained via a touch-screen.
19. The method of claim 16 wherein said user feedback comprises feedback data obtained via a keypad switch.
20. The method of claim 16 wherein said step of providing a data output signal includes the step of obtaining said display information from at least one of a remote server or operator via the internet.

## APPENDIX II RFOS DATA SHEET



# RFOS™ RF Operating System

### Introduction

Venture Technologies' RFOS™ is ready-to-go software that puts the Micrel RF500 to work in your product immediately. RFOS™ is the link between the RF500 and your application. No additional programming is necessary – allowing you to quickly and inexpensively implement wireless communication in your product.

This solution can be implemented in one of two methods. First, as a separate subsystem using a dedicated RF front-end microprocessor, RFOS™ interfaces to your application via a serial communications link. Alternately, RFOS™ can be integrated with your application (hardware and software) to provide a single microprocessor solution.

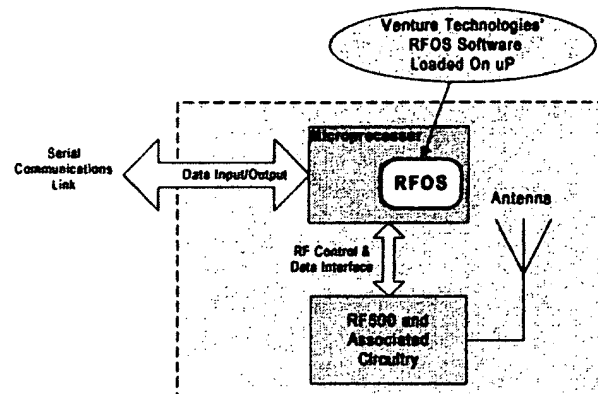
### RFOS™ Supplied by Venture Technologies as:

- Binary Object File
- Full Source Code Available

### Features

- Maximum Data Rate: 60kbaud
  - Reliable Communication
    - Data packets acknowledged for guaranteed data integrity
    - Buffers utilized to support bursty data
  - Simulated full duplex
  - Frequency Hopping Spread Spectrum (FHSS)
  - Various Network Topologies Supported
    - 2 units (cable replacement)
    - Star Network (multi-point addressable)
    - Linear Network
  - Auto Transmit Power Adjustment utilizing Received Signal Strength Indicator (RSSI)
  - Serial Communication Interface supports up to 115kbaud
  - FCC Part 15.247 Compliant
- 
- Ease of integration between the RFOS™ and the RF500 allows your wireless product to be market ready instantly.
  - Eliminates months of HW and SW development.
  - Easily ported to a variety of microprocessors (C-language).
  - RFOS™ is fully tested software for the Micrel RF500.
  - No RF experience / No Programming required – a drop-in solution from Venture Technologies.

### RF Subsystem Block Diagram



Along with the RFOS™, Venture Technologies will provide a complete documentation package containing the hardware design required for a successful wireless implementation.

### Implementation Package Includes:

- Schematic
- Layout
- Bill of Materials

### For More Information:

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